

Transmission Cost Recovery Rider Descriptions of Projects

The following projects were approved for recovery by the Commission in the Company's Transmission Cost Recovery Rider filing in Docket No. EL19-032:

- Eau Claire 345 kV Upgrade

The following projects were approved for recovery by the Commission in the Company's Transmission Cost Recovery Rider filing in Docket No. EL20-025:

- Canisota Junction to Salem Rebuild
- Long Lake to Baytown

The following projects were approved for recovery by the Commission in the Company's Transmission Cost Recovery Rider filing in Docket No. EL21-025:

- Bayfield Loop
- Line 0723 Rebuild: Bird Island to Atwater
 - Bird Island to Lake Lillian
 - Cosmos to Lake Lillian
- Line 0761 Rebuild: Lake City to Zumbrota
- Line 0790 Rebuild: Dassel to Delano¹
 - Dassel to Cokato
- Line 0794 Rebuild: Black Oak to Douglas County
- Line 0795 Rebuild: Freeport to West St. Cloud
 - Avon to Brockway Tap
 - St. John's to Watab River
- Line 5401 Rebuild: Maple Lake to Wakefield

The following projects were approved for recovery by the Commission in the Company's Transmission Cost Recovery Rider filing in Docket No. EL22-022:

- Huntley-South Bend 161 kV Rebuild
- Line 0714 Rebuild: Watonwan to Madelia

¹ We later updated the Line 0790 project name to "Dassel to Delano" to better reflect the end points of the project.

- Line 0717/0771 Thru Flow Mitigation
- Line 0726 Rebuild: Pipestone to Rock River to Woodstock
- Line 0741 Rebuild: Big Swan to Atwater
- Line 0749 Rebuild: Waseca to ITC Tap
- Line 0754 Rebuild: Linn Street to Becker
- Line 0782 Rebuild: Westgate to Gleason Lake
- Line 0795 Rebuild: Freeport to West St. Cloud New Segments in 2023
- Line 0859 Rebuild: Inver Hills to Chemolite

The following projects were approved for recovery by the Commission in the Company's Transmission Cost Recovery Rider filing in Docket No. EL23-026:

- Brookings Second Circuit
- Line 0708 Rebuild: Eagle Lake to Waterville
- Line 0736 Rebuild: Arden Hills to Lawrence Creek
- Line 0822 Rebuild: Str 107 to Empire

The following projects were approved for recovery by the Commission in the Company's Transmission Cost Recovery Rider filing in Docket No. EL24-030:

- Line 0732 Rebuild: Black Oak to Elrosa
- Line 0982 Rebuild: Crandall to Lake Crystal
- MISO LRTP2 Alexandria to Big Oaks
- MISO LRTP4 Wilmarth to North Rochester to Tremval
- MISO LRTP5 Tremval to Eau Claire to Jump River
- MISO LRTP6 Tremval to Rocky Run to Columbia

The following project was approved for recovery by the Commission in the Company's Transmission Cost Recovery Rider filing in Docket No. EL25-031:

- Line 0986/0987 Major Line Rebuild Double Circuit

Project Updates

Below we discuss project scope changes and any significant variances between projects' current capital cost forecast and the forecast presented in last year's TCR Rider Petition.

- **Eau Claire 345 kV**

Since the initial inclusion of the Eau Claire 345 kV project in the TCR Rider, the project scoping and phasing continued to develop. As a result of the refinement of the scoping and phasing, the Company separated costs by project component. In developing this year's TCR Petition, we realized previous TCR proceedings did not include the costs for all 10 phases of the project. Costs associated with the last four phases were part of the overall scope of work described when we first sought recovery of the project but were not represented in the project budget at that time. The current forecast includes costs for all remaining phases of the project.

- **Line 0723 Bird Island to Lake Lillian 69 kV Rebuild - Segment of Line 0723 Bird Island to Atwater 69kV Rebuild**

The capital cost increase forecasted for this project is due to a schedule delay caused by a revised design associated with Great River Energy crossings requiring new self-supporting steel-on-concrete pier structures and increased wire size associated with updated engineering standards for future line capacity.

- **Line 0795 Line 0795 St. John's to Watab River 69kV Rebuild**

The capital cost decrease for this project is related to drier than anticipated weather leading to more productive crew time that enabled the project to complete a month earlier than anticipated.

- **Huntley-South Bend 161 kV Rebuild**

The capital cost decrease for this project is related to drier than expected conditions allowing work to be completed sooner than planned.

- **Wilmarth-TC Thru Flow Mitigation**

The capital cost increase for this project is due to increased civil construction costs related to encountering unanticipated underground utilities which pushed construction into spring and summer, required matting and agricultural and property mitigations.

- **Line 0726 Rebuild Pipestone – Rock River – Woodstock**

The capital cost increase forecasted for this project is due to increased costs for both labor and materials related to inflationary pressure on the cost of conductor and poles. In addition, this project was delayed due to outage coordination in the area along with other work being prioritized.

- **Line 0741 Rebuild Big Swan – Atwater**

The capital cost increase forecasted for this project is due to revised cost estimates for resequencing the project phases and extending the overall duration of construction. Seasonal outage constraints and the agricultural nature of the project required the project to be sequenced in a way that is least disruptive to agriculture activities. Cost escalation related to the schedule delay also impacted total project cost.

- **Line 0749 Rebuild Waseca – ITC Tap**

The scope of work for this project was segmented in two phases. The forecasted capital cost submitted in our TCR Petition in Docket No. EL22-022 did not include the costs for both phases of the project as costs associated with the second phase were not yet represented in the budget when the project was filed. This represents approximately 90 percent of the estimated cost increase. The remaining cost increase is associated with incremental construction costs related to encountering unexpected underground utilities that resulted in redesigning some structures.

- **Line 0782 Rebuild Westgate – Gleason Lake**

The capital cost increase forecasted for this project is due to additional construction costs associated with permitting restrictions imposed for tree removal and constructability of the line in this heavy urban area.

- **Line 0795 Freeport to West St. Cloud New 2023 Segments**

The capital cost increase for this project is due to increased civil construction costs related to encountering unanticipated underground utilities.

- **Line 0859 Rebuild Inver Hills – Chemolite**

The capital cost increase forecasted for this project is related to sectionalizing the project as described in our previous TCR Petition in Docket No. EL25-031, due to a complex river crossing. The original forecast for this project did not include costs associated with one segment as costs associated with this segment were not yet represented in the budget when the project was filed. This represents 77 percent of the estimated cost increase. The remaining cost increase is associated with increased costs of civil construction related to the river crossing.

- **Line 0736 Rebuild Arden Hills to Lawrence Creek**

The capital cost increase forecasted for this project is due to changing the route of the line to tie into the recently rebuilt Birch substation, which required two additional line segments. This route change accomplished distribution capacity benefits for the electric system.

- **LRTP2 - Alexandria to Big Oaks**

The capital cost increase forecasted for this project is due to increased labor costs associated with contracting labor. The original estimate was based on internal labor and did not include the cost of outside contractors.

- **Line 0986/0987 Major Line Rebuild Double Circuit**

The scope of work for this double circuit rebuild was comprised of two segments as described in Attachment 1 and reflected in Attachment 18 of Docket No. EL25-031. The forecast capital cost provided in that filing inadvertently excluded one of the segments of the project. The current costs shown in this Petition include the entire scope – both segments – of this double circuit rebuild.

- **Line 0736 Rebuild Arden Hills to Lawrence Creek**

The updated Line 0736 Arden Hills to Lawrence Creek Rebuild project is an approximately 34.3 mile segmented rebuild of the 69 kV transmission line that spans between the Company's Arden Hills substation and the Company's Lawrence Creek substation. The 0736 transmission line is approximately 70 years old. This project's route has changed, increasing the number of line segments, which has increased the total project cost. The project will now go through the recently rebuilt Birch substation. This line is important because it serves distribution loads in the area for the Company, as well as other utilities.

As originally proposed in Docket No. EL23-026, the first segment of this project was an 8.5 mile rebuild between the Arden Hills Substation near Arden Hills, MN in Ramsey County and the Hugo Substation located near Hugo, MN. The second segment of this project was an approximately 12.8 mile rebuild between the Hugo Substation and the Scandia substation near Scandia, MN. These two line segments were reconfigured into four line segments due to a route change through the Birch substation.

The original third segment of this project was proposed as an approximately 9.0 mile rebuild between the Scandia substation near Scandia, MN and the Lawrence Creek substation near Taylors Falls, MN. This third segment did not change but is now referred to as segment five as detailed below.

The five segments of the Arden Hills to Lawrence Creek rebuild include:

- Segment one is a 4.05 mile rebuild between the Arden Hills substation located northeast of Arden Hills, MN and the Company's Birch substation located northeast of Shoreview, MN.
- Segment two is an 8.05 mile rebuild between the Birch substation and the Company's Hugo substation located north of Hugo, MN.
- Segment three is an 8.2 mile rebuild between the Hugo Substation and Structure 0736-270 located southeast of Weston, MN.
- Segment four is a 5.0 mile rebuild between Structure 0736-270 and the Company's Scandia substation north of Scandia, MN.
- Segment five is a 9.0 mile rebuild between the Scandia substation and the Company's Lawrence Creek substation west of Taylors Falls, MN.

Though this project was previously approved, we provide a map of the updated route for this project. See the Project Map (Attachment 18) for the estimated in-service date for this project.

New Projects

The Company seeks eligibility determination for the following projects:

1. Line 0719 Fort Ridgely to Winthrop

The Line 0719 Fort Ridgely to Winthrop project is an approximately 17.3 mile, four-segment rebuild of the 69 kV transmission Line 0719 between the Company's Fort Ridgely and Winthrop substations. The original line was installed in 1950 and is in poor condition. This line is important because it serves as an outlet generation line on the system. This project also includes substation capacity upgrades in the Company's Fort Ridgely substation to accommodate a new 1200A rating. This project was identified by MISO through their annual generation deliverability study, which identified future overloads that could limit generation output on the system. The purpose of this project is twofold: first, to rebuild the line due to age and condition and second, to increase the rated ampacity of the line segments to approximately 1200 amps.

- The first segment is a 0.5 mile rebuild between the Company's Fort Ridgely substation located northeast of New Ulm, MN and Great River Energy's (GRE) Schilling Tap located northeast of New Ulm, MN.
- The second segment is an 8.5 mile rebuild between GRE's Schilling Tap and GRE's Lafayette Tap southeast of Lafayette, MN.
- The third segment is a 1.0 mile rebuild between the GRE Lafayette Tap and the Company's Lafayette substation located in Lafayette, MN.
- The fourth segment is a 7.3 mile rebuild between the Company's Lafayette substation and the Company's Winthrop substation located south of Winthrop, MN.

See the Project Map (Attachment 18) for the estimated in-service date for this project.

2. Line 0721 Cedar Mountain to Winthrop

The Line 0721 Cedar Mountain to Winthrop project is an approximately 23.0 mile, three-segment rebuild of the 69 kV transmission Line 0721 that spans between the Company's Cedar Mountain and Winthrop substations. The project was expanded from the three segments of Line 0721, to include line 0719 as a fourth segment. Lines 0719 and 0721 were originally built in the 1930s and are being rebuilt due to age and

condition. These lines total about 25.0 miles and are important because they serve residential and rural load.

The Line 0721 work includes four segments.

- The first segment is a 7.5 mile rebuild between Structure 0721-71 outside of Great River Energy's Cedar Mountain substation located east of Franklin, MN and the East River Electric Power Cooperative's (EREPC) Cairo substation located north of Cairo, MN.
- The second segment is an 8.0 mile rebuild between the Cairo substation and the Company's Gibbon substation located northeast of Severance, MN.
- The third segment is an 8.0 mile rebuild between the Gibbon substation to Structure 0719-45 west of the Company's Winthrop substation located south of Winthrop, MN.
- The fourth segment is a rebuild of 69V transmission Line 0719, which is a 1.5 mile rebuild of double circuit lines 0719 and 0721 from the Winthrop substation west to Structure 0719-45.

See the Project Map (Attachment 18) for the estimated in-service date for this project.

3. Line 0724 Granite Falls to Bird Island

The Line 0724 Granite Falls to Bird Island project is a rebuild of approximately 37.0 miles of 69 kV transmission located west of Bird Island, MN and east of Granite Falls, MN. Line 0724 was originally built in 1951 with wires in triangular configuration and no shield wire position. A few segments of the line have been rebuilt using horizontal post monopole structures with wires in a delta configuration and with a shield wire. Wood pole ages vary along the line with 55 percent of the poles exceeding 40 years old and 34 percent more than 65 years old. The line is being rebuilt due to age and condition. This line is important because it serves residential and rural load, along with sugar processing facilities in the area. The project includes a full rebuild of five line segments.

- The first segment is a 6.5 mile rebuild between the Company's Bird Island substation located west of Bird Island, MN and the Company's Beaver Creek substation located east of Beaver Creek, MN.
- The second segment is a 2.5 mile rebuild between the Company's Beaver Creek substation and the Company's Troy Switching Station located west of Danube, MN.

- The third segment is a 4.0 mile rebuild between the Company's Danube substation located west of Danube, MN and the Company's Nighthawk substation located east of Lake Wilson, MN.
- The fourth segment is a 3.5 mile rebuild between the Company's Nighthawk substation and the Company's Renville substation located east of Renville, MN.
- The fifth segment is a 9.25 mile rebuild between the Company's Renville substation and the Company's Sacred Heart substation located east of Sacred Heart, MN.

See the Project Map (Attachment 18) for the estimated in-service date for this project.

4. Line 0732 Elrosa to Paynesville

The Line 0732 Elrosa to Paynesville project is an approximate 16.75 mile rebuild of 69 kV transmission Line 0732 that spans between the Company's Paynesville substation located north of Paynesville, MN north to structure 0732-253A, serving GRE's Elrosa Substation located south of Meire Grove, MN.

The transmission Line 0732 was originally built in 1951. The line is being rebuilt due to age and condition. The line is important because it serves the Zion, Elrosa, and Meire Grove Substations in Stearns County and continues north to the Black Oak Substation in Stearns County.

See the Project Map (Attachment 18) for the estimated in-service date for this project.

5. Line 0735 St. Bonifacius to Mound

The Line 0735 St. Bonifacius to Mound 69 kV Rebuild project is an approximate 8.3 mile rebuild of 69kV transmission Line 0735 that spans between GRE's St. Bonifacius substation located approximately four miles west of St. Bonifacius, MN and the Company's Mound substation located in Mound, MN.

The transmission Line 0735 was originally built in 1954. The line is being rebuilt due to age and condition. This line is important because it serves rural load and the greater western Hennepin County area.

See the Project Map (Attachment 18) for the estimated in-service date for this project.

6. Line 0737 Rebuild Gleason Lake to Mound

The Line 0737 Gleason Lake to Mound project is an approximately 11.8 mile rebuild of the 69 kV transmission Line 0737 that spans between the Company's Gleason Lake substation located in Wayzata, MN west to Structure 0737-157 and then south to Structure 0737-237 located just outside of Mound, MN.

The transmission Line 0737 was originally built in 1960. The line is being rebuilt due to age and condition. The line is important because it serves the greater Lake Minnetonka area and western Hennepin County area.

See the Project Map (Attachment 18) for the estimated in-service date for this project.

7. Line 0754 Buffalo to Maple Lake

The Line 0754 Buffalo to Maple Lake project is an approximately 8.1 mile rebuild of 69 kV transmission Line 0754 between the Company's Buffalo Substation located west of Buffalo, MN in Wright County and the Company's Maple Lake Substation located east of Maple Lake, MN in Wright County. The transmission Line 0754 was built in the 1940s. The line is being rebuilt due to age and condition. This line is important because it serves residential and rural loads.

See the Project Map (Attachment 18) for the estimated in-service date for this project.

8. Line 0760 Rebuild Red Wing to Wabasha

The Line 0760 Rebuild Red Wing to Wabasha project is an approximately 23.0 mile segmented rebuild of the 69 kV transmission Line 0760 that spans between the Company's Wabasha substation and the Company's Red Wing substation. The transmission Line 0760 was built in the 1950s. The line is being rebuilt due to age and condition. The line is important because it serves multiple cities with only dual sources. The project consists of four segments.

- The first segment is a 3.6 mile rebuild between Structure 760-212 near the Company's Wabasha substation located west of Wabash, and the Company's Lake City substation located in Lake City, MN.
- The second segment is an 8.0 mile rebuild between the Company's Lake City substation and the Company's Frontenac substation located in Frontenac, MN.

- The third segment is a 9.0 mile rebuild between the Company's Frontenac substation and the Company's Red Wing substation located southeast of Red Wing, MN.
- The fourth segment is a 2.0 mile rebuild of double circuits 0711 and 0760 from the Company's Redwing substation south to Structure 0711-10 located southeast of Red Wing, MN.

See the Project Map (Attachment 18) for the estimated in-service date for this project.

9. Line 0771 Plato to Winsted

The Line 0771 Plato to Winsted project will rebuild approximately 11.9 miles of the 69 kV transmission Line 0771 between the Company's Structure 0771-176 located northeast of the Plato Substation, which is just north of Plato, MN and Structure 0771-469 located directly outside the Winsted substation, which is located in Winsted, MN. The transmission Line 0771 was built in the 1950s and is being rebuilt due to age and condition. This line is important because it serves residential and rural load.

See the Project Map (Attachment 18) for the estimated in-service date for this project.

10. Line 0868 West St. Cloud to St. Stephen

The Line 0868 West St. Cloud to St. Stephen project is an approximately 11.1 mile rebuild of the 115 kV transmission Line 0868 that spans between the GRE's West St. Cloud substation located west of St. Joseph, MN and the Stearns Electric Association's substation St. Stephen tap in St. Stephen, MN.

The transmission Line 0868 is one of the Company's most frequently binding lines and this project will increase the rating on the line from 637A to 3622A, relieving the high congestion costs at these locations. The line is being rebuilt for two reasons; 1) due to age and condition, and 2) to relieve the electric system congestion on this line. This line is important because it serves rural central MN with a 115kV feed.

See the Project Map (Attachment 18) for the estimated in-service date for this project.

11. Line 5400 Paynesville to Rich Spring

The Line 5400 Paynesville to Rich Spring will rebuild approximately 15.7 miles of the 69 kV transmission Line 5400 between the Company's Paynesville substation located

north of Paynesville, MN and the Company's Rich Spring substation located between the cities of Richmond, MN and Cold Spring, MN.

This section of the transmission Line 5400 was built in the 1940s. The line is being rebuilt due to age and condition. This rebuild will replace existing structures and allow for the installation of new optical ground wire (fiber network cable) between the two substations. The line is important because it supports rural and residential load along with completing the installation of the fiber network for the communication ring in the area.

See the Project Map (Attachment 18) for the estimated in-service date for this project.